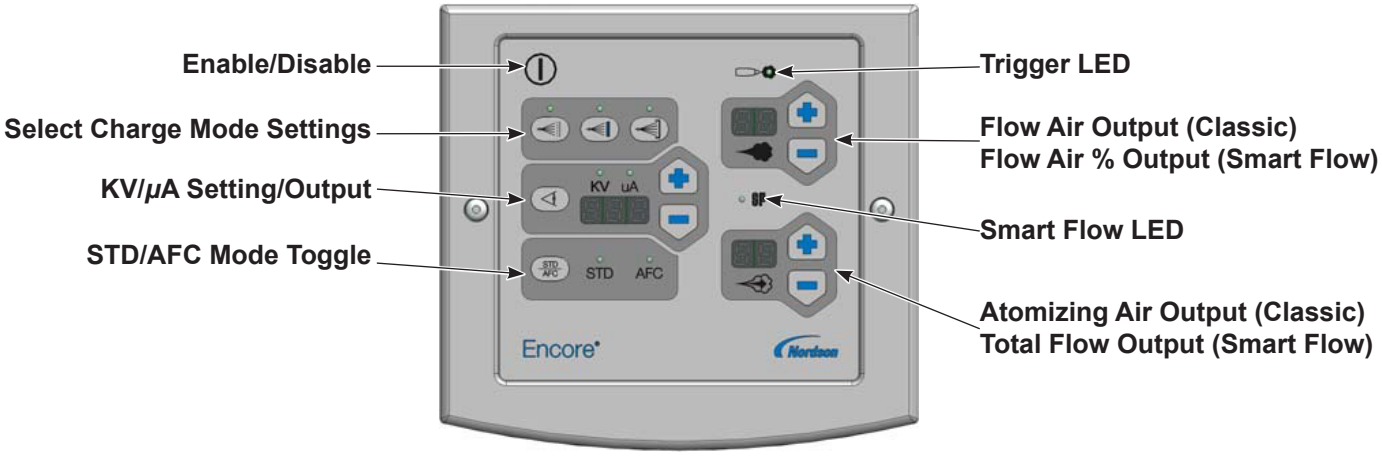
Nordson

Operator's Card
Document Number 1604859-03

Encore® LT Manual Powder Spray Systems

WARNING: Allow only qualified personnel to perform the following tasks. Follow the safety instructions in this document and all othe related documentation.

Controller Interface



Pressing the Enable/Disable button for three seconds puts the controller to sleep (low power mode). The displays and LEDs turn off. To wake the controller press the button again.

The system goes to sleep automatically if no activity is detected for approximately 15 minutes. Pulling the gun trigger, pressing the purge switch, or pressing a button on the controller interface wakes the controller.

When the gun is triggered, the Trigger LED lights will illuminate, and the actual kV/µA outputs are displayed. The two air flow displays always show the setpoints.

The Smart Flow LED light will illuminate when the controller is configured for the Smart Flow mode. Refer to the Powder Flow Setting for an explanation.

Controller Configuration

During power up or wake up from disable, press and hold the **+** and **–** buttons on the kV/uA panel for 1 second. When the kV/µA panel displays F − 1 for function 1 the controller is in configuration mode.

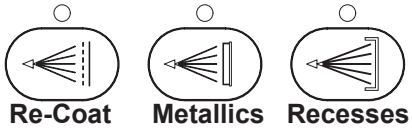
To change functions, press the Plus or Minus buttons on the kV/µA panel. To change function values press the **+** or **–** buttons on the Flow Air panel. To save the settings and exit Configuration Mode, press the Enable/Disable button.

Function No.	Name	Settings	Default
1	Gun Type	0 = Encore	0
2	Trigger Type	0 = External, 1 = Continuous	0
3	Electrostatic Control	0 = Custom, 1 = Classic, 2 = PE	1
4	Powder Flow Control	0 = Smart, 1 = Classic	1
5	Cable Length	0 = 6 meters, 1 = 12 meters, 2 = 18 meters	0
6	Vibratory Box Delay	On, 0-90 seconds	30

Electrostatic Settings

Select Charge® Mode

The Select Charge modes are non-adjustable electrostatic settings. The LEDs above the Select Charge mode buttons indicate the selected mode.



The Select Charge Modes and electrostatic setpoints are:

Re-Coat:	100 kV, 15 µA
Metallics:	50 kV, 50 µA
Deep Recesses:	100 kV, 60 µA

NOTE: If the STD/AFC selection button is pressed while using a Select Charge mode, the controller switches to STD or AFC mode. Pressing the + or − keys have no effect in Select Charge Mode.

Classic Electrostatic Mode

Classic Mode is the default electrostatic mode. In Classic mode the user can choose to control kV (STD) output or µA (AFC) output, but not both at the same time. AFC allows the user to set a top limit for current output. As current output increases, kV output decreases.

Press the STD/AFC button 

to toggle between STD and AFC mode.

Press the View button  to toggle the display between kV and µA.

Valid ranges are the same as in Custom Mode.

Press the **+** or **–** buttons to select the desired setpoint. The longer a button is pressed the faster the units change. Valid ranges for kV and µA are the same as in Custom Mode.

Custom Electrostatic Mode

Custom Mode is the factory optional mode. In Custom mode, both kV and µA can be adjusted independently. Both the STD and AFC LEDs are lit when this mode is configured.

Use the View button  to toggle the display between kV and uA.

Press the **+** or **–** buttons to select the desired setpoint. The longer a button is pressed the faster the units change. Valid ranges for kV and µA are the same as in Custom Mode.

- The valid STD (kV) range is 0 or 25−100 kV.
- The valid AFC (µA) range is 5−100 µA.

Encore LT PE Mode

To configure the controller for the Encore PE system, set function number 3 (Electrostatic Control) to setting 2 (Encore PE).

When the controller function number 3 is set to PE, the electrostatic settings will allow the user to control both kV and µA (custom mode) and they will be able to control the µA setting to values less than 3.0 µA in 0.1 µA increments

Powder Flow Settings

Classic Flow Mode − This is the factory default mode. This is the standard method of setting powder flow and velocity, by setting flow and atomizing air percentages separately and balancing them manually for optimum results. When the controller is configured for Classic Flow mode, the Smart Flow LED is off.

Smart Flow Mode − In this mode, the user sets the Total Flow rate and the Flow Air %. If the flow air % decreases, the flow air pressure decreases, but the atomizing air pressure increases, so that the result is that the powder velocity remains the same. The Smart Flow LED lights when the controller is configured for Smart Flow mode.

Smart Flow Mode

The Smart Flow LED lights when the controller is configured for Smart Flow mode.

sets the powder flow rate (Flow Air %).

sets the powder velocity (Total Flow).

Setting values for both are 0−99%.

Press the **+** or **–** buttons to select the desired setpoint. The longer a button is pressed the faster the units change.

Set Total Flow first to obtain the desired pattern size and velocity, then set Flow Air % for the desired powder flow.

NOTE: If either Total Flow or Flow Air are set to 0% then the controller cannot output any air when triggered and no powder is pumped.

Classic Flow Mode

To use Classic Flow mode, the controller must be configured for it. Refer to your system manual for configuration settings.

sets the flow air pressure as a percentage of maximum pressure.

sets the atomizing air pressure as a percentage of maximum pressure.

Setting values for both are 0−99% of maximum air pressure. Press the **+** or **–** buttons to select the desired setpoint. The longer a button is pressed the faster the units change.

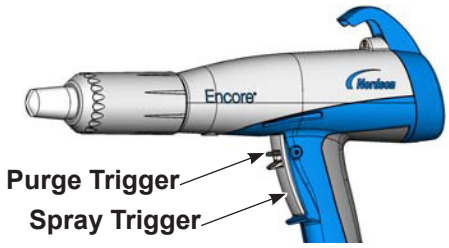
System Operation

NOTE: Allow powder in the feed hopper to fluidize for several minutes before spraying powder.

Spraying Powder: Point the spray gun into the booth and pull the spray trigger.

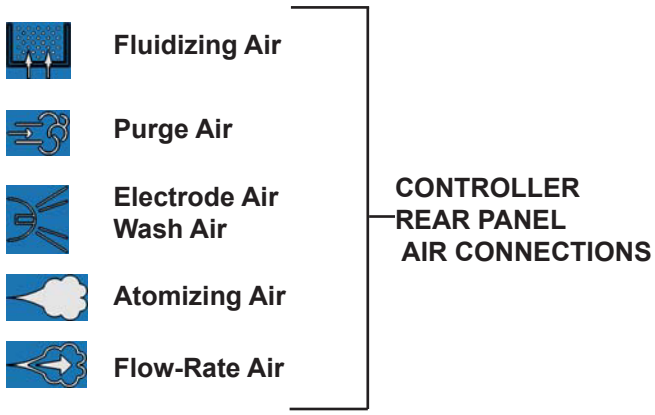
Purging the Gun: Release the spray trigger and press down on the purge trigger. Pump air and electrostatic voltage turn off and P appears on the displays.

Electrode air wash air turns on and off automatically as the gun is triggered. The air flow prevents powder from collecting on the electrode.



The box feeder **vibrator motor** turns on when the gun is triggered on. When the gun is turned off the vibrator motor stays on for a set period of time (0−90 seconds, factory default is 30) to prevent rapid on-off cycling of the motor during production.

Fluidizing air for box feeders turns on when the gun is triggered. Feed hopper fluidizing air turns on when the controller is turned on and remains on until the power is turned off. Adjust the fluidizing air flow with the needle valve on the rear panel of the controller. The powder should boil gently.



Maintenance

Clean the spray gun nozzle and powder path, and pump nozzle and venturi throat, in an ultrasonic cleaning machine, using Oakite® BetaSolv or an equivalent emulsion cleaning solution. Rinse with clean water and dry before re-installing.

Do not immerse the spray gun electrode assembly in the cleaning solution or rinse. Remove all O-rings before cleaning. Do not allow the O-rings to come in contact with the cleaning solution. Refer to your system manual for more information.

Troubleshooting

Refer to your system manual for more troubleshooting procedures, resistance checks, and continuity checks.

Problem	Possible Cause	Corrective Action
1. Gun not spraying powder, Trigger LED blinking	Gun triggered while controller powering up or waking up, or shorted trigger switch or cable	Release the spray trigger. Press the Disable/Enable button to put the controller to sleep, then press it again to wake it up.
2. Powder not charging, kV/μA display blinking	Gun is shorted	Check the cable and trigger switch.
3. Uneven pattern, unsteady or inadequate powder flow	Blockage in spray gun, powder feed hose, or pump	Check gun cable and power supply. Refer to your system manual.
	Nozzle, deflector, or electrode assembly worn	Purge the gun. Check the feed hose and pump.
	Low pump air pressure	Remove, clean, and replace as necessary.
	Low fluidizing air pressure	Increase pump air setpoints.
	Damp powder	Increase air pressure.
4. Voids in powder pattern	Worn nozzle or deflector	Check powder supply.
	Plugged electrode assembly or powder path in gun	Remove and replace if necessary.
5. Low powder flow or surging	Low supply air pressure	Remove and clean.
	Pump throat worn	Input air must be greater than 4.1 bar (60 psi).
	Pickup tube blocked	Check and replace if necessary.
	Fluidizing air not adjusted correctly	Check and clean if necessary.
	Powder hose plugged, kinked, or ID too small for length	Check and adjust.
	Regulator on controller manifold plugged or malfunctioning	Check hose. If longer than 20 ft, use 1/2 in. ID hose.
6. Loss of wrap, poor transfer efficiency	Low electrostatic voltage	Remove tubing at controller and check air flow. Replace regulator if necessary.
	Poor electrode connection	Increase voltage setpoint.
	Poorly grounded parts	Remove and clean. Check electrode and gun power supply.
7. Powder build up on electrode	Insufficient air wash air	Check part grounds. Resistance to ground should be less than 1 m□.
8. No kV output from gun	Damaged gun cable or gun power supply	Remove air wash connector from rear panel. Check orifice for blockage and clean if necessary.
9. No kV and powder output from gun or no purge air	Malfunctioning trigger switch or cable	Check cable and power supply.
10. More than one key on the keypad quits working when pressed	Flex connection from the keypad to the main board is not seated properly	Check Trigger LED. Check trigger switch and cable.

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